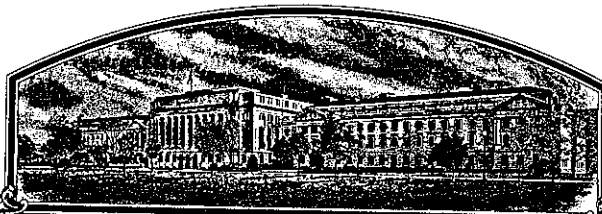


No.

8900282



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME;

Northrup King Co.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF, THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (ACT, 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

ALFALFA

'MultiKing 1'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D. C. this 31st day of October in the year of our Lord one thousand nine hundred and ninety.

Attest:

Kenneth Evans
Commissioner

Plant Variety Protection Office
Agricultural Marketing Service

Clayton Fentler
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) Northrup King Co.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. 87758	3. VARIETY NAME Multi King 1 JLS Multi Leaf 1 7 June 1990
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) P. O. Box 959 Minneapolis, MN 55440		5. PHONE (include area code) 612-593-7333	FOR OFFICIAL USE ONLY PVPO NUMBER 8900282 F I L I N G Date Aug. 2, 1989 Time 1:30 <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M. F E E S Filing and Examination Fee: \$250.- Date Aug. 2, 1989 Certificate Fee: \$250.- Date Aug. 30, 1990
6. GENUS AND SPECIES NAME Medicago sativa	7. FAMILY NAME (Botanical) Leguminosae		
8. CROP KIND NAME (Common Name) Alfalfa	9. DATE OF DETERMINATION May 1987		
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware	12. DATE OF INCORPORATION 1976		
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Dr. Robert W. Romig Northrup King Co. P. O. Box 959 Minneapolis, MN 55440			PHONE (include area code): 612-593-7305

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

a. ☒ Exhibit A, Origin and Breeding History of the Variety.
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety.
d. ☐ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.
f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____
g. ☒ Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.)
☐ YES (If "YES," answer items 16 and 17 below) ☒ NO (If "NO," skip to item 18 below)

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date: _____)
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?
☐ YES (If "YES," give names of countries and dates)
☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.
The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.
Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

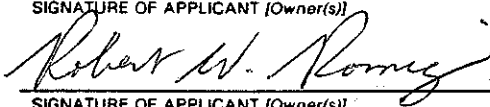
SIGNATURE OF APPLICANT [Owner(s)] 	CAPACITY OR TITLE Vice President Research	DATE July 25, 1989
SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR TITLE	DATE

EXHIBIT A

Origin and Breeding History of the Variety

The source of our multifoliate trait was three plants which we observed in 1973 in an experimental population of alfalfa which had been selected for resistance to feeding by the potato leafhopper. Selfed seed was produced on these plants and harvested in bulk. Plants with the multifoliate trait were selected from this bulk and crossed with the cultivar Thor at Stanton, MN in 1976. From 1977 to 1987, this original germplasm from the Thor x multifoliate cross was subjected to numerous cycles of phenotypic recurrent selection with independent culling for resistance to Phytophthora root rot, anthracnose and bacterial wilt, plus the multifoliate trait, winterhardiness, plant vigor and seed yield. In addition to continuing the improvement program for the original materials, new genetic material was introduced into the germplasm from 1982-85 by making crosses to the cultivars Drummor, C-78-514 (an NK experimental line), Maris Kabul, Sverre, Apollo 2, and MultiLeaf (from New York). Populations resulting from these crosses were subjected to phenotypic recurrent selection with independent culling for resistance to bacterial wilt, Phytophthora root rot, Verticillium wilt and anthracnose, plus winterhardiness, plant vigor, the multifoliate trait, and seed yield.

The parents of MultiKing 1 consisted of 1200 plants selected from the improved original source material (Thor x multifoliate) and 1200 plants from populations resulting from the crosses made during 1982-85. These plants were selected at Woodland, CA in 1987 for the multifoliate trait and transplanted into a field near Woodland where breeders' seed was produced using random pollination by honey bees. Breeders' seed was harvested from this field in both 1987 and 1988.

No variants exist beyond limits defined in Exhibit C. MultiKing 1 is stable for all essential and distinguishing characters during normal seed multiplication. It is as uniform as other alfalfa varieties presently accepted by state seed certification programs.

EXHIBIT B

Novelty Statement for the Alfalfa Variety MultiKing 1

AMENDED

MultiKing 1 combines the multifoliate^{of JLS 10/29/1990} trait and a high leaf to stem ratio with moderate fall growth (fall growth similar to Saranac), high resistance to bacterial wilt and Fusarium wilt, resistance to anthracnose, Phytophthora root rot and Verticillium wilt, plus moderate resistance to stem nematode. It is susceptible to pea aphid, spotted alfalfa aphid, and blue aphid. MultiKing 1 alfalfa is most like the variety Legend but differs in percent of multifoliate stems as measured by examining stems taken at intervals throughout the plot. MultiKing 1 has a significantly higher percentage of multifoliate stems than Legend, as shown in Table 1. All stems with more than three leaflets on two or more leaves were considered to be multifoliate. MultiKing 1 also has significantly higher leaf to stem ratio than Legend as shown by the data below.

Leaf to stem ratio

MultiKing 1	1.7:1
Arrow	1.5:1
Legend	1.4:1
LSD. _{.05}	.1

Test site was NK Research Center, London, Ontario, Canada. Values are averages of two sampling dates (July 13, 1988 - 4 replications and September 1, 1988 - 5 replications). Trial was planted May 1988.

Table 1. Comparison of the Multifoliate Stem Trait^{of JLS 10/29/1990}

TEST	^{of JLS 10/29/1990} Multifoliate Stems for Variety		Difference	LSD .05
	Multiking 1	Legend		
	%	%		%
Univ. of Minn. 1989				
Trial 1, 3 cuts	58	25	+33	14.0
Trial 2, 4 cuts	45	23	+22	18.2
Northrup King Co.				
Cleveland, WI 1990	70	33	+37	3.8
Stanton, MN 1988	53	20	+33	8.0
1989	65	45	+20	12.9
1990	70	34	+36	4.2
Average	60.2	30.0	+30.2	-

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705OBJECTIVE DESCRIPTION OF VARIETY
ALFALFA (*Medicago sativa* sensu Gunn et al.)

NAME OF APPLICANT(S) Northrup King Co.	TEMPORARY DESIGNATION 87758	VARIETY NAME Multiking 1 JLS Multileaf 1 7 June 1990
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 7500 Olson Memorial Hwy. Golden Valley, MN 55427		FOR OFFICIAL USE ONLY PVPO NUMBER 8900282

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place numbers in the boxes to designate the expressions which are characteristic of the commercial generations of the application variety. Data for quantitative plant characters should be based on a minimum of 100 plants. Include leading zeros when necessary (e.g., 089) for quantitative data. Comparative data should be determined from varieties entered in the same trial. Plant color may be precisely designated by using any recognized color chart, e.g., The Munsell Plant Tissue Color Charts.

1. WINTERHARDINESS:

6

CLASS:

1 = Very Non-Winterhardy (CUF 101)
3 = Intermediately Non-Winterhardy (Mesilla)
5 = (Du Puits)
7 = (Ranger)
9 = Extremely Winterhardy (Norseman)

2 = Non-Winterhardy (Moapa 69)
4 = Semi-Winterhardy (Lahontan)
6 = Moderately Winterhardy (Saranac)
8 = Winterhardy (Vernal)

TEST LOCATION: _____

2. FALL DORMANCY:

FALL DORMANCY DETERMINED FROM SPACED PLANTINGS (Solid Seeded Rows)

TESTING INSTITUTION AND LOCATION	DATE OF LAST CUT	DATE REGROWTH SCORED	REGROWTH SCORE OR AVERAGE HEIGHT				LSD .05
			APPLICATION VARIETY	CHECK VARIETIES*			
				Vernal	Ranger	Saranac	
Northrup King Co.	9/5/88	10/3/88	8.67	6.67	8.00	9.00	1.60

* CUF 101, Moapa 69, Mesilla, Lahontan, Du Puits, Saranac, Ranger, Vernal, or Norseman as appropriate.

Specify scoring system used: Inches of growth5

Fall Growth Habit (Determined from Fall Dormancy Trials)

1 = Erect (CUF 101)
7 = Semidecumbent (Vernal)

3 = Semierect (Mesilla)
9 = Decumbent (Norseman)

5 = Intermediate (Saranac)

3. RECOVERY AFTER FIRST SPRING CUT (In Southwest, first cut after March 21):

1 = Very Fast (CUF 101)
9 = Very Slow (Norseman)

3 = Fast (Saranac)

5 = Intermediate (Ranger)

7 = Slow (Vernal)

TEST LOCATION: _____

4. AREAS OF ADAPTATION IN U.S. (Where tested and proven adapted):

1

Primary Area of Adaptation

Other Areas of Adaptation

1 = North Central

2 = East Central

3 = Southeast

4 = Southwest

5 = Moderately Winterhardy Intermountain

6 = Winterhardy Intermountain

7 = Great Plains

8 = Other (Specify) 2, 3, 6, 7

5. FLOWERING DATE (When 10% of plants possess open flowers at time of first spring cut):

Days Earlier Than

Same As

Days Later Than

1 = CUF 101

2 = Mesilla

3 = Saranac

4 = Vernal

5 = Norseman

TEST LOCATION: _____

6. PLANT COLOR (Determined from healthy regrowth 3 weeks after first spring cut, controlling leafhoppers if necessary):

☐

1 = Very Dark Green (524)

2 = Dark Green (Vernal)

3 = Light Green (Ranger)

COLOR CHART VALUE (Specify chart used: _____):

APPLICATION VARIETY: _____

VERNAL: _____

TEST LOCATION: _____

7. CROWN TYPE (Determined from spaced plantings):

☐

Noncreeping Types:

1 = Broad (Vernal)

2 = Intermediate (Saranac)

3 = Narrow (CUF 101)

Creeping Types:

4 = Creeping Rooted (Rangelander)

5 = Rhizomatous (Rhizoma)

8. FLOWER COLOR (Determine frequency of plants for each color class as defined by USDA Agricultural Handbook No. 424 (Barnes 1972), allowing all plants in plot to flower):

☐

% Purple and Violet (Subclasses 1.1 to 1.4)

☐

% Blue (Subclasses 2.3 and 2.4)

☐

% Variegated Other Than Blue (Subclasses 2.1, 2.2, 2.5 to 2.9)

☐

% Yellow (Subclasses 4.1 to 4.4)

☐

% Cream (Class 3)

☐

% White (Class 5)

TEST LOCATION: Stanton, MN

9. POD SHAPE (Determine frequency of plants with the following pod shapes produced on well cross-pollinated racemes):

☐

% Tightly Coiled (One or more coils, center more or less closed)

☐

% Loosely Coiled (One or more coils, center conspicuously open)

☐

% Sickle (Less than 1 coil)

TEST LOCATION: _____

10. PEST RESISTANCE: Provide in the appropriate column, trial data for application variety, and resistant (R) and susceptible (S) check varieties, synthetic generation tested, average severity index scores (ASI), least significant difference statistics (LSD .05), the institution in charge of test, year, and location of test, and whether test is a field or laboratory evaluation. Describe scoring system, and any test procedure which differs from standard methods proposed by Elgin (1982). Trial data from other test years or locations should be presented whenever available on a separate document as Exhibit D. Seeds of the check varieties and germplasm lines listed below can be obtained from the USDA Field Crops Laboratory, Bldg. 001, Rm. 335, BARC-West, Beltsville, MD 20705. Although comparisons with check varieties listed below are preferred, comparisons with any appropriate check variety recommended by Elgin (1982) may be presented.

A. DISEASE RESISTANCE: DISEASE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	% Resistance XAS LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Anthracnose, Race 1 (<i>Colletotrichum trifolii</i>)	Application (R)	one	49	120	---	5.5%	Northrup King Co. 1987 Stanton, MN Laboratory
	Arc (R)		62	120	---		
	Saranac (S)		4	120	---		
	SCORING SYSTEM: Surviving seedlings following inoculation and incubation.						
Anthracnose, Race 2 (<i>Collectotrichum trifolii</i>)	Application						
	Saranac AR (R)						
	Arc (S)						
	SCORING SYSTEM:						
Bacterial Wilt (<i>Corynebacterium insidiosum</i>)	Application (HR)	one	73	120	2.03	A.S.I. .70	Northrup King Co. 1988 Stanton, MN Field
	Vernal (R)		42	120	2.77		
	Narragansett (S)		0	120	4.35		
	SCORING SYSTEM: Plants scored 0 or 1 on scale of 0-5 considered resistant.						
Common Leafspot (<i>Pseudopeziza medicaginis</i>)	Application						
	MSA-CW3AN3 (R)						
	Ranger (S)						
	SCORING SYSTEM:						

10. A. PEST RESISTANCE (Continued):

DISEASE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Downy Mildew (<i>Peronospora trifoliorum</i>)	Application						
Isolate, if known:	Saranac (R)						
	Kanza (S)						
SCORING SYSTEM:							
Fusarium Wilt (<i>Fusarium oxysporum</i> f. <i>medicaginis</i>)	Application (HR)	one	51	> 100	2.48	.65	University of Minn. 1988 Field
	Moapa 69 (R)		77	> 100	1.40		
	Narragansett (R)		48	> 100	2.81		
SCORING SYSTEM:							
Plants scored 0 or 1 on scale of 0-5 considered resistant.							
Phytophthora Root Rot (<i>Phytophthora megasperma</i> f. <i>medicaginis</i>)	Application (R)	one	38	> 100	3.91	.77	Northrup King Co. 1988 Stanton, MN Field
	Agate (R)		41	> 100	3.78		
	Saranac (S) Thor (S)		6	> 100	5.08		
SCORING SYSTEM:							
Plants scored 1 or 2 on scale of 1-6 considered resistant.							
Verticillium Wilt (<i>Verticillium albo-atrum</i>)	Application (R)	one	42	144	---	LSD on % resistant plants at .05 = 4%	Northrup King Co. 1987 Stanton, MN Laboratory
	Vertus (R)		35	144	---		
	Saranac (S)		2	144	--		
SCORING SYSTEM:							
Plants scored 1 or 2 on scale of 1-5 considered resistant.							
Other (Specify)	Application						
	(R)						
	(S)						
SCORING SYSTEM:							
Other (Specify)	Application						
	(R)						
	(S)						
SCORING SYSTEM:							

B. INSECT RESISTANCE:

INSECT	VARIETY	SYN. GEN. TESTED	PERCENT DEFOLIATION	DEFOLIATION IN PERCENT OF RESISTANT CHECK	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Alfalfa Weevil (<i>Hypera postica</i>)	Application						
	Arc (R)			100			
	Saranac (S)						
SCORING SYSTEM:							

10. B. INSECT RESISTANCE (Continued):

INSECT	VARIETY	SYN. GEN. TESTED	PERCENT SEEDLING SURVIVAL	NUMBER OF SEEDLINGS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY	
Blue Alfalfa Aphid (<i>Acyrtosiphon kondoi</i>)	Application Susceptible	one	3	150	6.8	1.03	Northrup King Co. 1988 Woodland, CA Laboratory	
	CUF 101 (R)		64	150	2.7			
	XXXXX ARC (S)		2	150	6.8			
	SCORING SYSTEM: Plants scored 1, 2 or 3 on scale of 1-9 considered resistant.							
Pea Aphid (<i>Acyrtosiphon pisum</i>)	Application Susceptible	one	34	120	3.1	0.5	Northrup King Co. 1988 Stanton, MN Laboratory	
	Kanza (R)		49	120	2.7			
	Ranger (S)		29	120	3.2			
	SCORING SYSTEM: Plants scored 1 or 2 on scale of 1-5 considered resistant.							
Spotted Alfalfa Aphid (<i>Therioaphis maculata</i>) Biotype, if known:	Application LR	one	24	150	8.0	.66	Northrup King Co. 1988 Woodland, CA Laboratory	
	Kanza (R)		33	150	6.7			
	Ranger (S)		10	150	8.8			
	SCORING SYSTEM: Plants scored 1, 2 or 3 on scale of 1-9 considered resistant.							
INSECT	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY	
Potato Leafhopper Yellowing (<i>Empoasca fabae</i>)	Application							
	MSA-CW3An3 (R)							
	Ranger (S)							
	SCORING SYSTEM:							
Other (Specify)	Application							
	(R)							
	(S)							
	SCORING SYSTEM:							
C. NEMATODE RESISTANCE:								
NEMATODE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY	
Northern Root Knot (<i>Meloidogyne hapla</i>)	Application							
	Nev. Syn. XX (R)							
	Lahontan (S)							
	SCORING SYSTEM:							

10. C. NEMATODE RESISTANCE (Continued):

NEMATODE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Southern Root Knot (<i>Meloidogyne incognita</i>)	Application						
	Moapa 69 (R)						
	Lahontan (S)						
	SCORING SYSTEM:						
Stem Nematode (<i>Ditylenchus dipsaci</i>)	Application MR	one	29	> 100	3.2	0.4	Northrup King Co. 1988 Stanton, MN Laboratory
	Lahontan (R)		32	> 100	3.2		
	Ranger (S)		16	> 100	3.5		
	SCORING SYSTEM:						
Other (Specify)	Application						
	(R)						
	(S)						
	SCORING SYSTEM:						

11. INDICATE THE VARIETY THAT MOST CLOSELY RESEMBLES THE APPLICATION VARIETY FOR EACH OF THE FOLLOWING CHARACTERS:

CHARACTER	VARIETY	CHARACTER	VARIETY
Winterhardiness		Plant Color	
Recovery After 1st Cut	Saranac	Crown Type	Saranac
Area of Adaptation	Legend	Combined Disease Resistance	Legend
Flowering Date		Combined Insect Resistance	Ranger

REFERENCES

- Barnes, D.K. 1972. A System for Visually Classifying Alfalfa Flower Color. U.S. Dep. Agric. Handb. 424. 18 pp. (Note: Greenish cast of plate 6, A and B is an artifact of printing, actual colors a blend of yellow and white.)
- Elgin, J.H., Jr., (ed.). 1982. Standard Tests to Characterize Pest Resistance in Alfalfa Cultivars. U.S. Dep. Agric. Tech. Bull. (In Press).
- Gunn, C.R., W.H. Skrdla, and H.C. Spencer. 1978. Classification of *Medicago sativa* L. using legume characters and flower colors. U.S. Dep. Agric. Tech. Bull. 1574. 84 pp.
- Munsell Color Co. 1977. Munsell Plant Tissue Color Charts. Munsell Color Co., Inc. Baltimore.

NOTE: Any additional descriptive information and supporting documentation may be provided as Exhibit D.

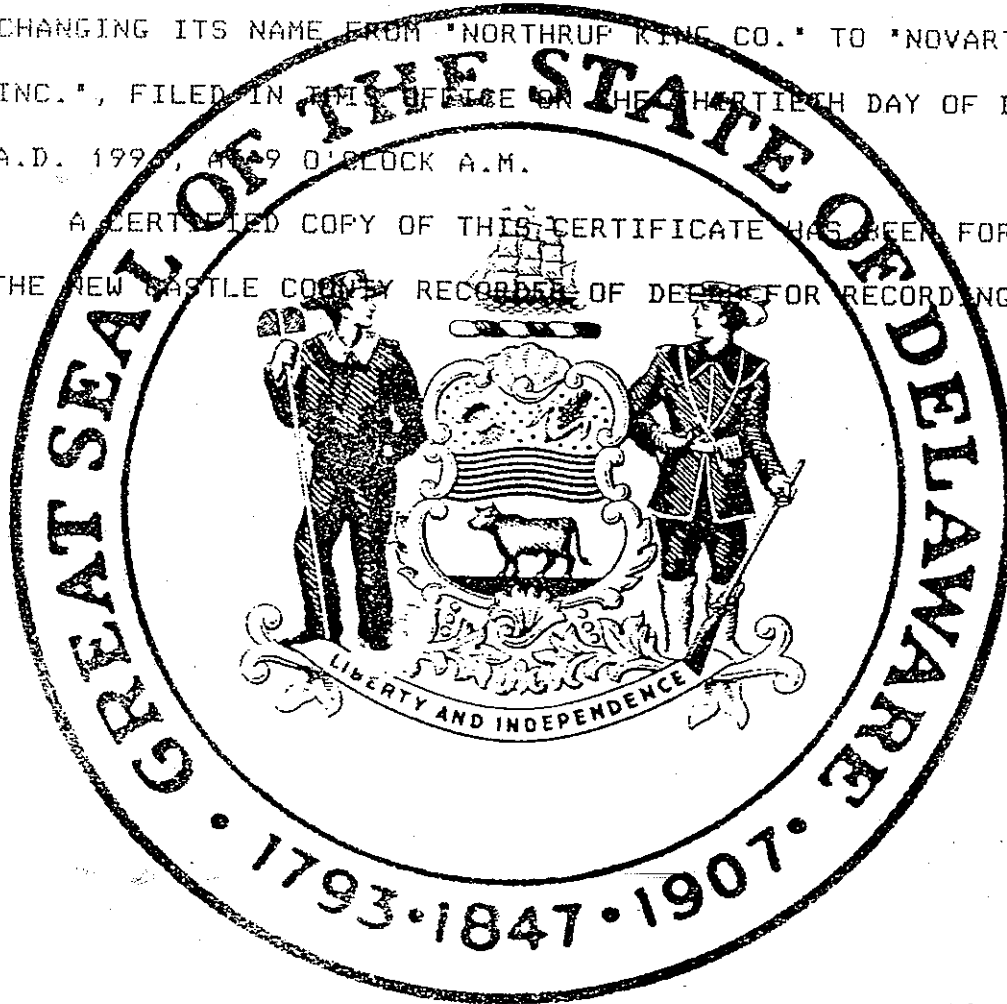
EXHIBIT E**STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP**

Alfalfa cultivar MultiKing 1 was developed by the Northrup King Co. alfalfa breeding staff from germplasm sources cited in Exhibit A of the application. Northrup King believes that MultiKing 1 is novel as defined in the Plant Variety Protection Act, and therefore, that Northrup King Co. is the sole owner of the cultivar.

Office of the Secretary of State

I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "NORTHRUP KING CO.", CHANGING ITS NAME FROM "NORTHRUP KING CO." TO "NOVARTIS SEEDS, INC.", FILED IN THIS OFFICE ON THE THIRTIETH DAY OF DECEMBER, A.D. 1996, AT 9 O'CLOCK A.M.

A CERTIFIED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS FOR RECORDING.



Edward J. Freel

Edward J. Freel, Secretary of State

0829320 8100

960389892

AUTHENTICATION:

8267947

DATE:

12-31-96

CERTIFICATE OF AMENDMENT OF CERTIFICATE OF INCORPORATION
OF
NORTHROP KING CO.

It is certified that:

1. The name of the corporation (hereinafter called the "Corporation") is Northrup King Co.

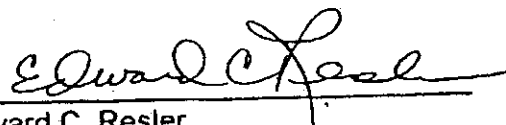
2. The Certificate of Incorporation of the Corporation is hereby amended by striking out Section 1 thereof and by substituting in lieu of said Section the following new Section.

1. The name of the Corporation is Novartis Seeds, Inc.

3. The amendment of the certificate of incorporation herein certified has been duly adopted and written consent has been given in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware.

4. The effective date of the amendment herein certified shall be January 1, 1997.

Signed on December 27, 1996.


Edward C. Resler
Vice President & Secretary